Reference Schematic 32 Pin V103

RTL8111G Series / 8111GS Series / 8111GUS Series
RTL8111H Series / 8111HS Series / 8118AS Series
RTL8106E Series / 8106EUS Series
RTL8107E Series / 8107ES Series

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Realtek Semiconductor Corp.
No.2, Innovation Road II, Hsinchu Science Park, Hsinchu 300, Taiwan

Title: RTL81Gseries_81Hseries_8118ASseries_8106series_8107series 32 Pin Reference Schematic: Index

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Power Sequence Must Refer to Layout Guide.

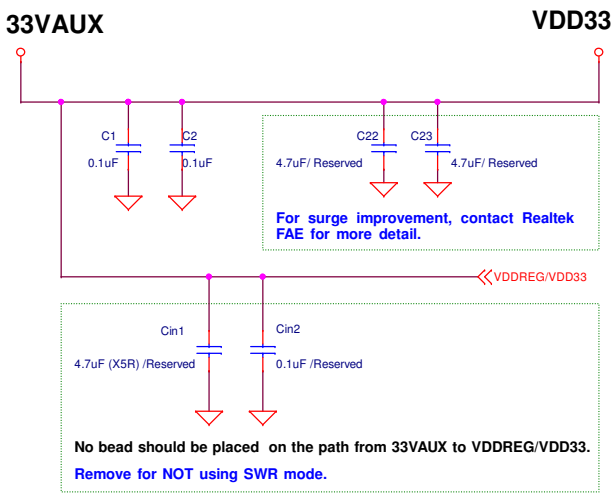
For RTL8111G(S) Series/ RTL8111GUS Series/ RTL8111H(S) Series/ RTL8106EUS Series / RTL8107E(S) Series / RTL8118AS Series

* Place C1 and C2 close to each VDD33 pin-- 11, 32

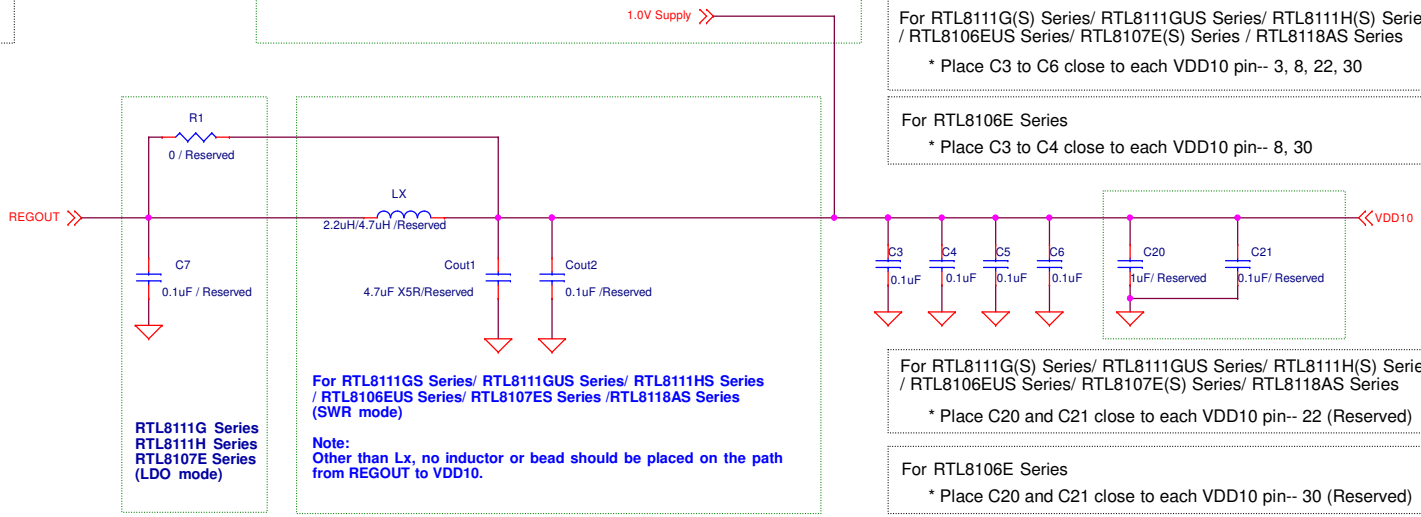
* For surge improvement, place C22 and C23 close to each VDD33 pin-- 11, 32. (optional)

For RTL8106E Series

* Place C1 and C2 close to each VDD33 pin-- 23, 32



If using external power supply, please refer to the following "3.3V and 1.0V Power-Supply Configurations" and contact Realtek FAE for more detail.



For RTL8111G(S) Series/ RTL8111GUS Series/ RTL8111H(S) Series / RTL8106EUS Series/ RTL8107E(S) Series / RTL8118AS Series

* Place C3 to C6 close to each VDD10 pin-- 3, 8, 22, 30

For RTL8106E Series

* Place C3 to C4 close to each VDD10 pin-- 8, 30

For RTL8111G(S) Series/ RTL8111GUS Series/ RTL8111H(S) Series / RTL8106EUS Series/ RTL8107E(S) Series/ RTL8118AS Series

* Place C20 and C21 close to each VDD10 pin-- 22 (Reserved)

For RTL8106E Series

* Place C20 and C21 close to each VDD10 pin-- 30 (Reserved)

3.3V and 1.0V Power-Supply Configurations

	1.0 V source	Lx	Cout1,2	Cin1,2	R1	C7
RTL8111G Series/ RTL8111H Series/ RTL8107E Series	LDO	X	X	X	O	O
RTL8111G Series/ RTL8111H Series/ RTL8107E Series	External	X	X	X	X	O
RTL8111GS Series/ RTL8111GUS Series/ RTL8111HS Series/ RTL8106EUS Series/ RTL8107ES Series /RTL8118AS Series	SWR	O	O	O	X	X
RTL8106E Series	LDO	X	X	X	X	X

Note:
1. R1 is reserved for the convenience of changing the 1.0V supply source between SWR/LDO mode and external supply. No design change of PCB model is needed with R1 reserved.

If only one 1.0V supply source is selected for one PCB model, i.e. no other choices are reserved:

a. For RTL8111G Series, RTL8111H Series and RTL8107E Series, LDO mode only
R1 => short REGOUT to VDD10.

2. Please refer to the table above when using different 1.0V supply source.
a. For RTL8111GS Series, RTL8111GUS Series, RTL8111HS Series, RTL8106E Series, RTL8106EUS Series, RTL8107ES Series and RTL8118AS Series, External 1.0V Supply is Not Permitted.

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Title: RTL81Gseries_81Hseries_8118ASseries_8106series_8107series 32 Pin Reference Schematic : Power
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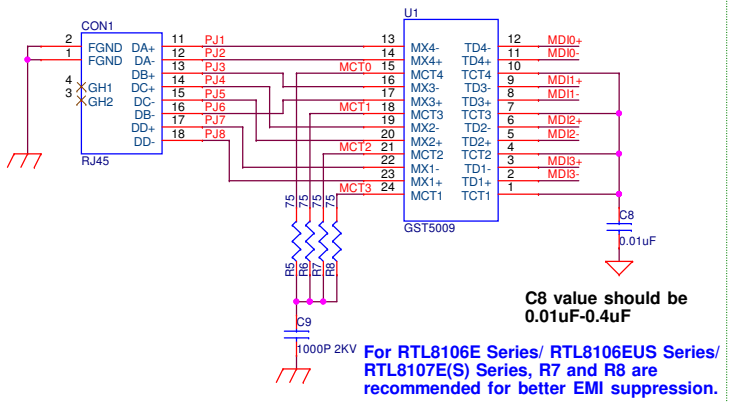
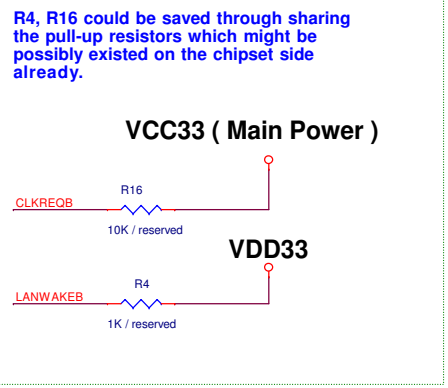
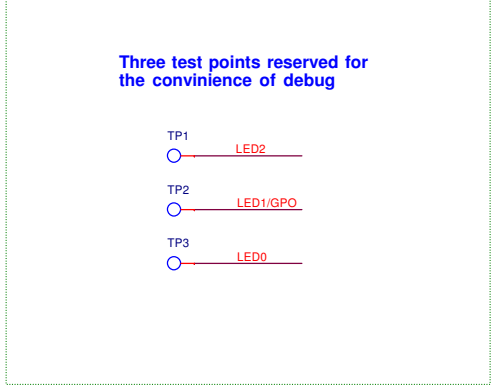
Connector



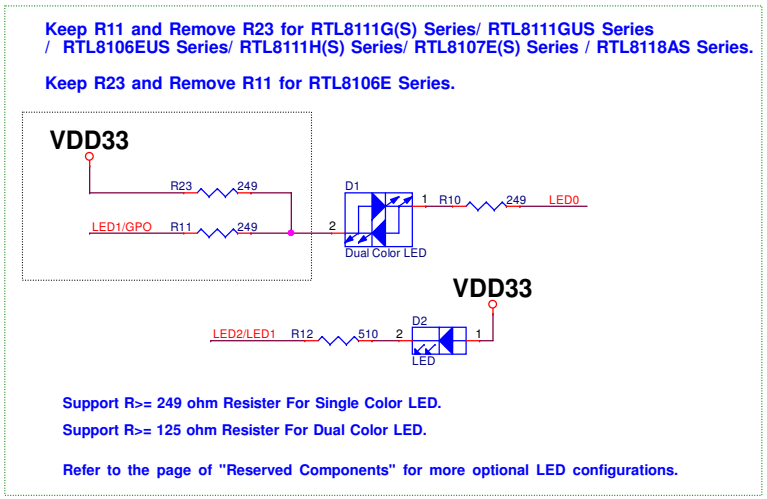
Pull-up resistors



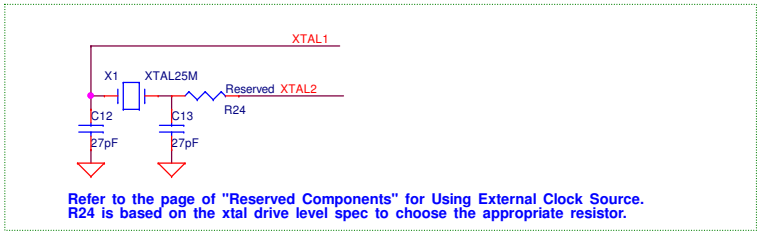
Test Point



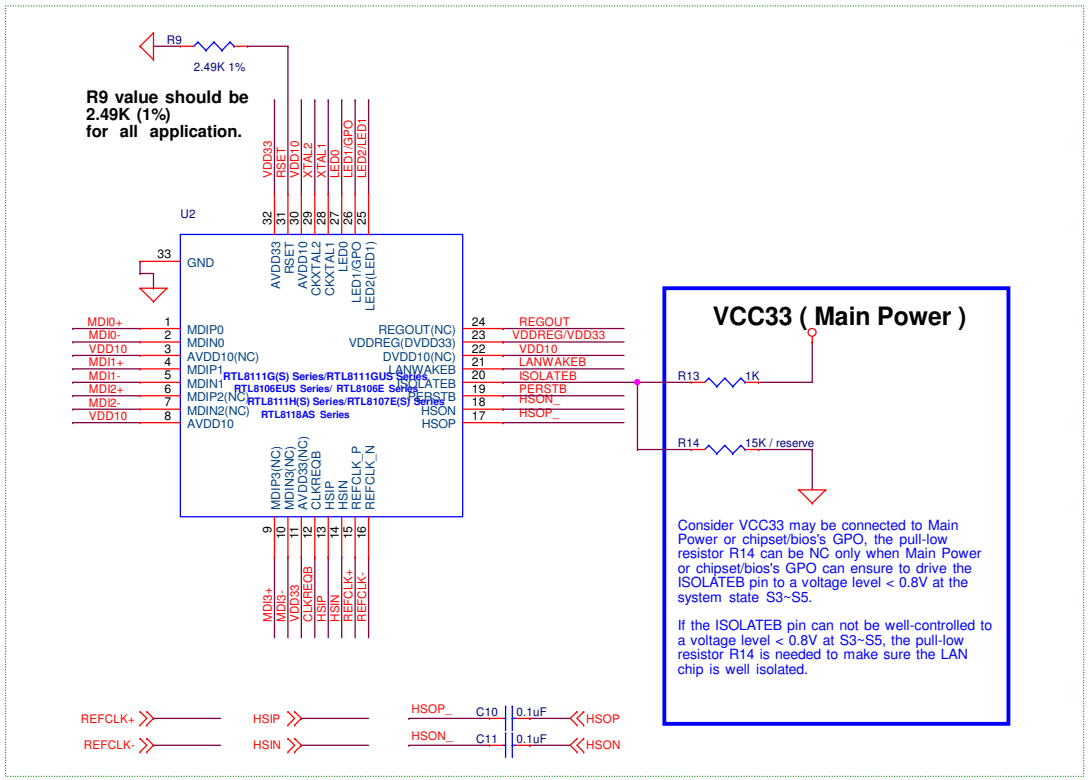
LED



XTAL



Controller



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Title: RTL81Gseries_81Hseries_8118ASseries_8106series_8107series 32 Pin Reference Schematic: Controller		
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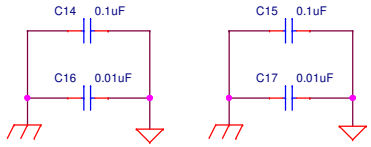
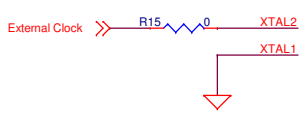
Reserved for Noise Isolation



C14 to C17 Reserved for Noise Isolation between Chassis GND and System GND (optional)

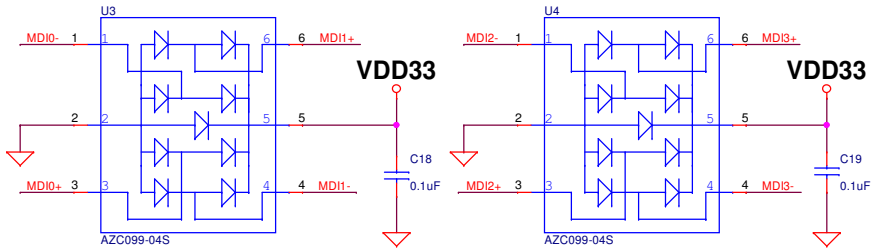
Reserved for Using External Clock Source



Pin29- XTAL2 is External Clock Input Pin.
Pin28- XTAL1 must be connected to GND when using external clock source.

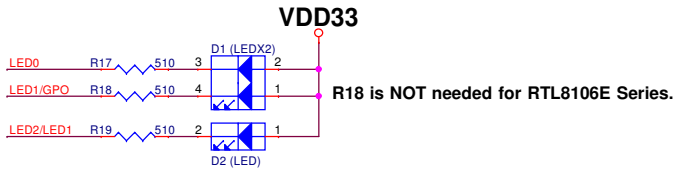
R15 Reserved for Using External Clock Source (optional)

Reserved for TVS Components



Note :
1. U3, U4 and C18, C19 reserved for line-to-line Surge and Cable ESD on the secondary side. (optional)
2. Gas Tube is for line-to-ground Surge on the primary side. (optional)

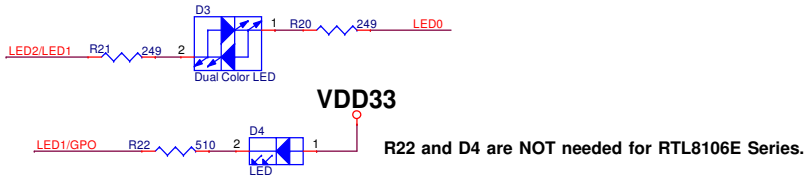
Optional LED Configurations



R18 is NOT needed for RTL8106E Series.

Support R >= 249 ohm Resister For Single Color LED.

R17 to R19 and D1, D2 Reserved for only Single Color LED Configuration (optional)



R22 and D4 are NOT needed for RTL8106E Series.

Support R>= 249 ohm Resister For Single Color LED.

Support R>= 125 ohm Resister For Dual Color LED.

R20 to R22 and D3, D4 Reserved for Single Color + Dual Color LED Configuration (optional)

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Title: RTL81Gseries_81Hseries_8118ASeries_8106series_8107series 32 Pin Reference Schematic:Reserved Components

Size: A3 | Document Number: RTL81Gseries_81Hseries_8118ASeries_8106series_8107series 32 Pin Reference Schematic | Rev:

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Bill Of Materials Oct 14, 2013

Item	Quantity	Reference	Part
1	1	Lx	2.2uH
2	2	Cout1,Cin1	4.7uF X5R
3	1	CON1	RJ45
4	10	C1,COUT2,CIN2,C2,C3,C4, C5,C6,C10,C11	0.1uF
5	1	C8	0.01uF
6	1	C9	1000P 2KV
7	2	C12,C13	27pF
8	1	D1	Dual Color LED
9	1	D2	LED
10	4	R5,R6,R7,R8	75
11	1	R9	2.49K 1%
12	2	R10,R11	249
13	1	R12	510
14	1	R13	1K
15	1	U1	GST5009
16	1	U2	RTL8111GS Series/ RTL8111GUS Series RTL8111HS Series/ RTL8106EUS Series RTL8107ES Series / RTL8118AS Series
17	1	X1	XTAL25M

Note: This is a R-BOM list for RTL8111GS Series/ RTL8111GUS Series/ RTL8111HS Series/ RTL8106EUS Series/ RTL8107ES Series / RTL8118AS Series with SWR mode used.

Bill Of Materials Oct 14, 2013

Item	Quantity	Reference	Part
1	1	CON1	RJ45
2	9	C1,C2,C3,C4,C5,C6,C7, C10,C11	0.1uF
3	1	C8	0.01uF
4	1	C9	1000P 2KV
5	2	C12,C13	27pF
6	1	D1	Dual Color LED
7	1	D2	LED
8	4	R5,R6,R7,R8	75
9	1	R9	2.49K 1%
10	2	R10,R11	249
11	1	R12	510
12	1	R13	1K
13	1	U1	GST5009
14	1	U2	RTL8111G Series/ RTL8111H Series/ RTL8107E Series
15	1	X1	XTAL25M

Note: This is a R-BOM list for RTL8111G Series/ RTL8111H Series/ RTL8107E Series with LDO mode used.

Bill Of Materials Oct 14, 2013

Item	Quantity	Reference	Part
1	1	CON1	RJ45
2	6	C1,C2,C3,C4,C10,C11	0.1uF
3	1	C8	0.01uF
4	1	C9	1000P 2KV
5	2	C12,C13	27pF
6	1	D1	Dual Color LED
7	1	D2	LED
8	4	R5,R6,R7,R8	75
9	1	R9	2.49K 1%
10	2	R10,R23	249
11	1	R12	510
12	1	R13	1K
13	1	U1	GST5009
14	1	U2	RTL8106E Series
15	1	X1	XTAL25M

Note: This is a R-BOM list for RTL8106E Series.

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Title: RTL81Gseries_81Hseries_8118ASseries_8106series_8107series 32 Pin Reference Schematic: Bill of M

Size	Document Number	Rev
	RTL81Gseries_81Hseries_8118ASseries_8106series_8107series 32 Pin Reference	Schematic

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1.01 Release Note

1. Add Series part name
2. Add RTL8118AS

1.02 Release Note

1. Modify external clock source description (P04. Reserved Components)

1.03 Release Note

1. Modify xtal circuit (P03. Controller)

Realtek Semiconductor Corp. No.2, Innovation Road II, Hsinchu Science Park, Hsinchu 300, Taiwan		
Title: RTL81Gseries_81Hseries_8118ASseries_8106series_8107series 32 Pin Reference Schematic: Change Note		
Size: A	Document Number: RTL81Gseries_81Hseries_8118ASseries_8106series_8107series 32 Pin Reference Schematic	Rev
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